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ROCKY COAST MORPHOTYPES IN THE WESTERN CENTRAL ADRIATIC COAST (ABRUZZO, CENTRAL ITALY)

Vania MANCINELLI [1]

[1] *Dipartimento di Ingegneria e Geologia, Università "G. d'Annunzio" di Chieti-Pescara, Via dei Vestini 30, 66013 Chieti, vaniamancinelli@gmail.com*

The main geomorphological features of coastal cliffs were investigated along the western central Adriatic coast (Abruzzo). The study aimed to contribute to define the factors controlling the development of coastal cliffs as a result of tectonics and geomorphologic processes.

Rocky coasts and cliffs occur in a variety of geological settings, with a wide range of morphologies depending on rock type, tectonics and climate. Rocky coastal areas can be associated with mobile regions with active or recent tectonics, or develop as low-relief cliffs along stable margins, with limit seaward flattened areas. The western central Adriatic coast (within the Abruzzo Region), stretches from the mouth of the Tronto river to the Trigno river's one, covering a total length of 125 km. The general physiographical features distinguish a northern sector of low coast (90 km long), a central sector of rocky coast (26 km long) and a southern tract of low coast (9 km long). The central sector is typified by rocky coast, without a coastal plain, on clayey-sandy-conglomeratic lithotypes referable to Pliocene-Pleistocene regressive marine succession. The main coastal landforms are active, inactive and paleo-cliffs with summit heights between 25 and 120 m a.s.l. that define the eastern termination of mesa reliefs just above the coastline.

Coastal cliffs were investigated through detailed field geological and geomorphological survey. The geological survey allowed to recognize cliffs on sandstone, cliffs on conglomerate, cliffs on late Quaternary slope continental deposits and coastal slopes on ancient slide deposits. The geomorphological survey outlined coastal cliffs dominated by both gravitational slope processes and marine processes. The main resulting landforms are landslides scarps and deposits, rockfall deposits, notches and shore platforms.

The synthesis of lithostratigraphical and geomorphological field data allowed for the detailed morpho-lithostratigraphic characterization of the main different coastal sectors, the detection of distinct morphotypes and of the main morphogenetic processes affecting the coastal cliffs. The study made it possible to identify eight different rocky coast morphotypes on the basis of lithology, geomorphological features and state of activity. More specifically, active cliffs (five morphotypes), inactive cliffs (one morphotype), paleocliffs (one morphotype) and coastal slopes without a clear cliff (one morphotype) were identified.

The coastal cliffs features are the result of a close combination of the lithostratigraphical arrangement of coastal areas, morphotectonic setting, late-Quaternary continental and marine morphogenetic erosive/sedimentary processes, which developed in an uplifting (since Middle Pleistocene) coastal system on a clay, sand, sandstone and conglomerate Pliocene-Pleistocene marine succession.